



## DEPARTMENT OF TRANSPORTATION

### Federal Aviation Administration

#### 14 CFR Part 39

[Docket No. FAA-2022-0874; Project Identifier AD-2022-00337-T; Amendment 39-22307; AD 2023-01-13]

RIN 2120-AA64

#### Airworthiness Directives; The Boeing Company Airplanes

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Final rule.

**SUMMARY:** The FAA is adopting a new airworthiness directive (AD) for certain The Boeing Company Model DC-9-81 (MD-81), DC-9-82 (MD-82), DC-9-83 (MD-83), and DC-9-87 (MD-87) airplanes; and Model MD-88 airplanes. This AD was prompted by an evaluation by the design approval holder (DAH) indicating that certain center wing lower stringers are subject to widespread fatigue damage (WFD). WFD analysis found that fatigue cracks could grow to a critical length after the structural modification point (SMP) for these center wing lower stringers. This AD requires replacing certain left and right side center wing lower stringers. The FAA is issuing this AD to address the unsafe condition on these products.

**DATES:** This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**ADDRESSES:**

*AD Docket:* You may examine the AD docket at [regulations.gov](https://www.regulations.gov) under Docket No. FAA-2022-0874; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this final rule, any comments received, and other information. The address for Docket Operations is U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590.

*Material Incorporated by Reference:*

- For service information identified in this final rule, contact Boeing Commercial Airplanes, Attention: Contractual & Data Services (C&DS), 2600 Westminister Blvd., MC 110-SK57, Seal Beach, CA 90740-5600; telephone 562-797-1717; website [myboeingfleet.com](https://myboeingfleet.com).

- You may view this service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195. It is also available at [regulations.gov](https://www.regulations.gov) under Docket No. FAA-2022-0874.

**FOR FURTHER INFORMATION CONTACT:** Manuel Hernandez, Aerospace Engineer, Airframe Section, FAA, Los Angeles ACO Branch, 3960 Paramount Boulevard, Lakewood, CA 90712-4137; phone: 562-627-5256; email: [manuel.f.hernandez@faa.gov](mailto:manuel.f.hernandez@faa.gov).

**SUPPLEMENTARY INFORMATION:****Background**

The FAA issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 by adding an AD that would apply to certain The Boeing Company Model DC-9-81 (MD-81), DC-9-82 (MD-82), DC-9-83 (MD-83), and DC-9-87 (MD-87) airplanes; and Model MD-88 airplanes. The NPRM published in the *Federal Register* on August 31,

2022 (87 FR 53419). The NPRM was prompted by an evaluation by the DAH indicating that certain center wing lower stringers are subject to WFD. WFD analysis found that fatigue cracks could grow to a critical length after the SMP for these center wing lower stringers. In the NPRM, the FAA proposed to require replacing certain left and right side center wing lower stringers. The FAA is issuing this AD to address potential fatigue cracking of the right and left side center wing lower stringers S-11 through S-22 between wing stations Xcw=13 and Xcw=15. If not addressed, undetected fatigue cracks could grow to a critical length after the SMP at 81,740 total flight cycles. Any undetected cracks in three or more adjacent stringers in the right or left side center wing lower stringers S-11 through S-22 may result in a principal structural element's inability to sustain limit load, which could adversely affect the structural integrity of the airplane. Performing the replacement required by this AD terminates the repetitive inspections required by AD 2020-10-10 Amendment 39-19913 (85 FR 31046, May 22, 2020) (AD 2020-10-10, which addresses the unsafe condition until the airplane reaches the SMP).

## **Discussion of Final Airworthiness Directive**

### **Comments**

The FAA received comments on the NPRM from Boeing, and three individuals. The comments from one individual were outside the scope of this rulemaking. The following presents the comments received and the FAA's response to each comment.

### **Request to Allow Certified non-Boeing Mechanics to Perform Replacements**

An individual requested that a certified mechanic not hired by Boeing be allowed to perform the replacement specified in the proposed AD. The commenter stated that it appears that Boeing must take care of the replacements, which must be paid for by the airplanes' owners, which could create a conflict of interest. Another commenter suggested that an external party should inspect the repaired airplanes to ensure no further issues will arise.

The FAA agrees to clarify. Unless specified otherwise, ADs allow an FAA-approved licensed mechanic authorized to do maintenance to perform the replacement actions. Operators may therefore use a qualified mechanic of their choice, and do not have to use a Boeing employee for the replacements. The FAA has not changed this AD regarding this issue.

**Request to Clarify Certain Language in the Background Section of the Proposed AD.**

Boeing requested that certain language in the Background section of the proposed AD be changed for clarification. Boeing asked that a sentence describing AD 2020-10-10 be revised. The sentence in the NPRM reads: “AD 2020-10-10 requires repetitive inspections for cracking in the left and right side center wing lower skin at stringers S-18 through S-20, the fastener holes common to stringers S-11 through S-22, and the forward and aft skins, and repair.” Boeing asked that the sentence be revised to read: “AD 2020-10-10 requires repetitive inspections for cracking in the left and right side fastener holes common to stringers S-11 through S-22 and the forward and aft skins, and center wing lower skin at stringers S-18 through S-20, and repair.” Boeing stated that the revised language would correctly identify the inspection requirements and list them in the same order as the description in the service information.

The FAA agrees that the proposed wording better matches the description in the service information. However, that sentence is not carried over to this final rule. Therefore, the FAA has not changed this AD regarding this issue.

**Request to Clarify Certain Language in Paragraph (e) of the Proposed AD.**

Boeing requested that the language in paragraph (e) of the proposed AD be clarified to specify that this AD is being issued to address “potential” fatigue cracking. Boeing stated that not all structure subject to replacement will have developed fatigue cracking and that the required action involves proactive replacement.

The FAA agrees with the request to change the language. The phrase “address fatigue cracking” in paragraph (e) of this AD has been changed to read “address potential fatigue cracking.”

**Request to Clarify Certain Language in the Explanation of Compliance Time Paragraph of the Proposed AD.**

Boeing requested that the language in the Explanation of Compliance Time paragraph of the proposed AD be changed for clarification. Boeing stated that all structure subject to replacement is certified type design and not all will have developed fatigue cracking, therefore replacing the term “discrepant structure” with the term “certain structure” would be more consistent with the language of the SUMMARY section.

The FAA agrees that not all structure subject to replacement will have developed fatigue cracks at SMP. However, that sentence is not carried over to this final rule. Therefore, the FAA has not changed this AD regarding this issue.

**Conclusion**

The FAA reviewed the relevant data, considered any comments received, and determined that air safety requires adopting this AD as proposed. Accordingly, the FAA is issuing this AD to address the unsafe condition on these products. Except for minor editorial changes, and any other changes described previously, this AD is adopted as proposed in the NPRM. None of the changes will increase the economic burden on any operator.

**Related Service Information under 1 CFR Part 51**

The FAA reviewed Boeing Alert Requirements Bulletin MD80-57A246 RB, dated December 17, 2021. This service information specifies procedures for replacement of the center wing lower stringers S-11 through S-22 between Xcw=0 and Xcw=121.688, left and right sides.

This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in ADDRESSES.

### **Costs of Compliance**

The FAA estimates that this AD affects 22 airplanes of U.S. registry. The FAA estimates the following costs to comply with this AD:

<b>Estimated costs</b>				
<b>Action</b>	<b>Labor cost</b>	<b>Parts cost</b>	<b>Cost per product</b>	<b>Cost on U.S. operators</b>
Replacement	1,572 work-hours X \$85 per hour = \$133,620	\$216,000	\$349,620	\$7,691,640

### **Authority for this Rulemaking**

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

The FAA is issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: General requirements. Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

### **Regulatory Findings**

This AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the

national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that this AD:

(1) Is not a “significant regulatory action” under Executive Order 12866,

(2) Will not affect intrastate aviation in Alaska, and

(3) Will not have a significant economic impact, positive or negative, on a

substantial number of small entities under the criteria of the Regulatory Flexibility Act.

#### **List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

#### **The Amendment**

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

#### **PART 39 - AIRWORTHINESS DIRECTIVES**

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

#### **§ 39.13 [Amended]**

2. The FAA amends § 39.13 by adding the following new airworthiness directive:

**2023-01-13 The Boeing Company:** Amendment 39-22307; Docket No. FAA-2022-0874; Project Identifier AD-2022-00337-T.

#### **(a) Effective Date**

This airworthiness directive (AD) is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

#### **(b) Affected ADs**

This AD affects AD 2020-10-10, Amendment 39-19913 (85 FR 31046, May 22, 2020) (AD 2020-10-10).

**(c) Applicability**

This AD applies to The Boeing Company Model DC-9-81 (MD-81), DC-9-82 (MD-82), DC-9-83 (MD-83), and DC-9-87 (MD-87) airplanes; and Model MD-88 airplanes, certificated in any category, as identified in Boeing Alert Requirements Bulletin MD80-57A246 RB, dated December 17, 2021.

**(d) Subject**

Air Transport Association (ATA) of America Code 57, Wings.

**(e) Unsafe Condition**

This AD was prompted by an evaluation by the design approval holder (DAH) indicating that the center wing lower stringers S-11 through S-22 are subject to widespread fatigue damage (WFD). The FAA is issuing this AD to address potential fatigue cracking of the right and left side center wing lower stringers S-11 through S-22 between wing stations Xcw=13 and Xcw=15. If not addressed, undetected fatigue cracks could grow to a critical length after the structural modification point (SMP) at 81,740 total flight cycles. Any undetected cracks in three or more adjacent stringers in the right or left side center wing lower stringers S-11 through S-22 may result in a principal structural element's inability to sustain limit load, which could adversely affect the structural integrity of the airplane.

**(f) Compliance**

Comply with this AD within the compliance times specified, unless already done.

**(g) Required Actions**

Except as specified by paragraph (h) of this AD: At the applicable times specified in the "Compliance" paragraph of Boeing Alert Requirements Bulletin MD80-57A246 RB, dated December 17, 2021, do all applicable actions identified in, and in accordance with, the Accomplishment Instructions of Boeing Alert Requirements Bulletin MD80-57A246 RB, dated December 17, 2021.



Note 1 to paragraph (g): Guidance for accomplishing the actions required by this AD can be found in Boeing Alert Service Bulletin MD80-57A246, dated December 17, 2021, which is referred to in Boeing Alert Requirements Bulletin MD80-57A246 RB, dated December 17, 2021.

**(h) Exceptions to Service Information Specifications**

Where Boeing Alert Requirements Bulletin MD80-57A246 RB, dated December 17, 2021, specifies contacting Boeing for replacement instructions: This AD requires doing the replacement using a method approved in accordance with the procedures specified in paragraph (j) of this AD.

**(i) Terminating Action for AD 2020-10-10**

Accomplishment of the replacement specified in the Accomplishment Instructions of Boeing Alert Requirements Bulletin MD80-57A246 RB, dated December 17, 2021, terminates all of the requirements of AD 2020-10-10.

**(j) Alternative Methods of Compliance (AMOCs)**

(1) The Manager, Los Angeles ACO Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or responsible Flight Standards Office, as appropriate. If sending information directly to the manager of the certification office, send it to the attention of the person identified in paragraph (k) of this AD. Information may be emailed to:

9-ANM-LAACO-AMOC-Requests@faa.gov.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the responsible Flight Standards Office.

(3) An AMOC that provides an acceptable level of safety may be used for any repair, modification, or alteration required by this AD if it is approved by The Boeing

Company Organization Designation Authorization (ODA) that has been authorized by the Manager, Los Angeles ACO Branch, FAA, to make those findings. To be approved, the repair method, modification deviation, or alteration deviation must meet the certification basis of the airplane, and the approval must specifically refer to this AD.

**(k) Related Information**

For more information about this AD, contact Manuel Hernandez, Aerospace Engineer, Airframe Section, FAA, Los Angeles ACO Branch, 3960 Paramount Boulevard, Lakewood, CA 90712-4137; phone: 562-627-5256; email: [manuel.f.hernandez@faa.gov](mailto:manuel.f.hernandez@faa.gov).

**(l) Material Incorporated by Reference**

(1) The Director of the Federal Register approved the incorporation by reference (IBR) of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this service information as applicable to do the actions required by this AD, unless the AD specifies otherwise.

(i) Boeing Alert Requirements Bulletin MD80-57A246 RB, dated December 17, 2021.

(ii) [Reserved]

(3) For service information identified in this AD, contact Boeing Commercial Airplanes, Attention: Contractual & Data Services (C&DS), 2600 Westminister Blvd., MC 110-SK57, Seal Beach, CA 90740-5600; telephone 562-797-1717; website [myboeingfleet.com](http://myboeingfleet.com).

(4) You may view this service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195.

(5) You may view this service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, [fr.inspection@nara.gov](mailto:fr.inspection@nara.gov), or go to: [www.archives.gov/federal-register/cfr/ibr-locations.html](http://www.archives.gov/federal-register/cfr/ibr-locations.html).

Issued on January 13, 2023.

Gaetano A. Sciortino, Acting Director,  
Compliance & Airworthiness Division,  
Aircraft Certification Service.

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